

Amendment and Response

Applicant: Andrew Harvey Barr et al.

Serial No.: 10/618,966

Filed: July 14, 2003

Docket No.: 200205324-1 (H300.202.101)

Title: SUPPORTING A SHORT PRINTED CIRCUIT CARD

REMARKS

This Amendment is responsive to the Office Action mailed March 24, 2004. Claims 1-37 were rejected. With this response, claims 1, 10, 18, 22-25, 30, and 37 have been amended. Claims 1-37 remain pending in the application and are presented for reconsideration and allowance.

Response to Item 10 of the Examiner's Detailed Action

Attached hereto please find a Supplemental Information Disclosure Statement identifying the Clark et al. U.S. Patent 6,169,662 by the correct patent number.

Claim Rejections under 35 U.S.C. § 112

Claims 23-25 were rejected under 35 U.S.C. § 112 as having insufficient antecedent basis. With this Response, claims 23-25 have been amended to depend from claim 22. It is respectfully submitted that claims 23-25 now recite proper antecedent basis and are in condition for allowance. Applicants request reconsideration of claims 23-25 and withdrawal of the 35 U.S.C. § 112 rejections.

Claim Rejections under 35 U.S.C. § 102

Claims 1-2, 5-7, 10-11, 14-15, 18-19, 22-24, and 30-33 were rejected under 35 U.S.C. § 102(b) as being anticipated by the Cavanna U.S. Patent No. 4,198,024 and separately by the Hsu et al. U.S. Patent No. 5,383,793.

Applicants have amended independent claims 1, 10, 18, 22, and 30 to clarify aspects of the claimed invention. Applicants respectfully submit that neither the Cavanna Patent nor the Hsu et al. Patent teach or suggest amended independent claims 1, 10, 18, 22, and 30.

The Cavanna Patent teaches, at column 4, lines 7-11, a printed circuit card holder 1 that is bolted at its base 3 to a backplane support member 15 of a card cage 17. The Cavanna Patent teaches a connector 19 mounted to the backplane support 15 that is configured for electrical connection with a PC board 21. In this configuration, the PC board 21 as taught by the Cavanna Patent juts from the connector 19 and is unsupported at a PC card edge 35. As a solution, the Cavanna Patent teaches a support that includes the holder 1. However, the holder 1 is bolted to the backplane support 15 and extends across the length of the PC board

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21 to the PC card edge 35. See the Cavanna Patent at column 4, lines 11-42. Consequently, the support taught in the Cavanna Patent spans the length of the PC board 21, and does not span from an opposing card guide to the PC card edge 35. For this reason, it is submitted that the holder 1 as taught by the Cavanna Patent will impede the cooling air flow to the PC board 21 and limit the number of PC boards 21 that can be packed into the card cage 17.

The Hsu et al. Patent teaches a printed circuit board retainer including a base 21, a retainer post 41, and a retainer catch 61. The base 21 is attached to one side of a card edge connector 73, as shown in Figure 5. The retainer post 41 spans across a circuit card 83 to a top edge of the card 83. The retainer catch 61 is slideable along the retainer post 41 and couples about the top edge of the circuit card 83. See the Hsu et al. Patent at column 3, lines 24-43 and column 4, lines 14-31. Accordingly, it is submitted that the retainer as taught by the Hsu et al. Patent is another of the bolt-on styles of retainers that impede cooling airflow to the circuit cards 83 and limit circuit card 83 packing density.

Amended independent claim 1 includes the limitations of a short card support for supporting a short printed circuit card having a card guide edge adapted to couple to a first card guide of the electronic system and a first edge not coupled to the electronic system, and the short card support comprises a card guide end adapted to insert into a second card guide of the electronic system. These limitations of amended claim 1 are not taught or suggested by the Cavanna Patent or the Hsu et al. Patent.

Amended independent claim 10 includes the limitations of a printed circuit card having a card guide edge adapted to couple to a first card guide of the electronic system, and a first edge; and a card support configured to couple to the first edge of the printed circuit card, the card support including a card guide end adapted to insert into a second card guide of the electronic system. These limitations of amended claim 10 are not taught or suggested by the Cavanna Patent or the Hsu et al. Patent.

Amended independent claim 18 includes the limitations of a printed circuit card mechanically coupled to the electronic system on a first edge and mechanically and electrically coupled to the electronic system on a connector edge; and a printed card support comprising a card guide end inserted into a card guide of the electronic system opposite the first edge, a card receptor end coupled with a second edge of the printed circuit card, and a

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support span connecting the card guide end and the card receptor end. These limitations of amended claim 18 are not taught or suggested by the Cavanna Patent or the Hsu et al. Patent.

Amended independent claim 22 includes the limitations of an electronic system defining a first card guide and an opposing second card guide, a short printed circuit card having a card guide edge adapted to couple to the first card guide and a first edge, and a short card support comprising a card guide end adapted to insert into the second card guide of the electronic system. These limitations of amended claim 22 are not taught or suggested by the Cavanna Patent or the Hsu et al. Patent.

Amended independent claim 30 includes the limitations of a short card inserted into the electronic system, the short card having a card guide edge coupled to a first card guide of the electronic system and a first edge not coupled to a card guide in the electronic system; and a support spanning from the first edge of the short card to a second card guide of the electronic system, wherein the second card guide opposes the first card guide. These limitations of amended claim 30 are not taught or suggested by the Cavanna Patent or the Hsu et al. Patent.

Dependent claims 2, 5-7 further define patentably distinct independent claim 1; dependent claims 11, 14-15 further define patentably distinct independent claim 10; dependent claim 19 further defines patentably distinct independent claim 18; dependent claims 23-24 further define patentably distinct independent claim 22; and dependent claims 31-33 further define patentably distinct independent claim 30. Therefore these dependent claims are believed to be allowable.

Claims 26-29 and 37 were rejected under 35 U.S.C. § 102(b) as being anticipated by the Carney et al. U.S. Patent No. 5,706,173.

The Carney et al. Patent teaches a support 36 for a long PCI card 34 in a computer enclosure 21. The support 36 taught by the Carney et al. Patent employs two brackets 43, 48 secured by two screws 42, 47 to the enclosure 21.

Applicants respectively submit that the Carney et al. Patent fails to teach or suggest the method of independent claim 26. Specifically, independent claim 26 includes a method of supporting a short printed circuit card insertable into an electronic system having card guides. The method of claim 26 includes coupling the first edge of the short printed circuit card to a **first card guide** of the electronic system; and supporting the second edge of the

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short printed circuit card with a short card support comprising a card receptor end removably attached to the second edge of the short printed circuit card, a card guide end adapted to removably couple to a **second card guide** of the electronic system, and a support span connecting the card receptor end and the card guide end. The Carney et al. Patent does not teach or suggest a method of supporting a short printed card in an electrical system having card guides as recited in independent method claim 26.

Dependent claims 27-29 further define patentably distinct independent method claim 26; and amended dependent claim 37 now further defines patentably distinct independent claim 30. Therefore these dependent claims are believed to be allowable.

Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejections and allowance of claims 1-2, 5-7, 10-11, 14-15, 18-19, 22-24, 26-29, 30-33, and 37.

Claim Rejections under 35 U.S.C. § 103

Claims 3-4, 8-9, 12-13, 16-17, 20-21, and 34-36 were rejected under 35 U.S.C. § 102(b), or in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over the Cavanna Patent. Claims 3-4, 8, 12-13, 17, 20, and 35-36 were rejected under 35 U.S.C. § 102(b) or in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over the Hsu et al. Patent.

Dependent claims 3-4, 8-9 further define patentably distinct independent claim 1; dependent claims 12-13, 16-17 further define patentably distinct independent claim 10; dependent claims 20-21 further define patentably distinct independent claim 18; and dependent claims 34-36 further define patentably distinct independent claim 30. Therefore, these dependent claims are also believed to be allowable.

Therefore, applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejections and allowance of dependent claims 3-4, 8-9, 12-13, 16-17, 20-21, and 34-36.

CONCLUSION

In view of the above, Applicants respectfully submit that pending claims 1-37 are in form for allowance and are not taught or suggested by the cited references. Therefore,



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reconsideration and withdrawal of the rejections and formal allowance of claims 1-37 is respectfully requested.

The Examiner is invited to telephone the Applicants' representative at the below listed number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either David A. Plettner at Telephone No. (408) 447-3013, Facsimile No. (408) 447-0854 or Patrick G. Billig at Telephone No. (612) 573-2003, Facsimile No. (612) 573-2005.

In addition, all correspondence should continue to be directed to the following address:

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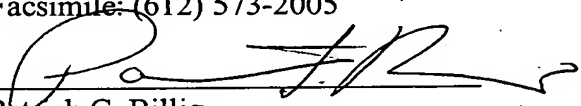
Respectfully submitted,

Andrew Harvey Barr et al.

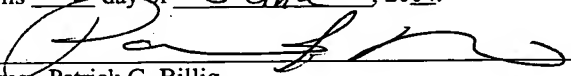
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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 24 day of June, 2004.

By 
Name: Patrick G. Billig